

## **Electronic Supplementary Information (ESI)**

### **Doping Cu(I) ions into CdS/ZnS core/shell nanocrystals through a cation exchange strategy**

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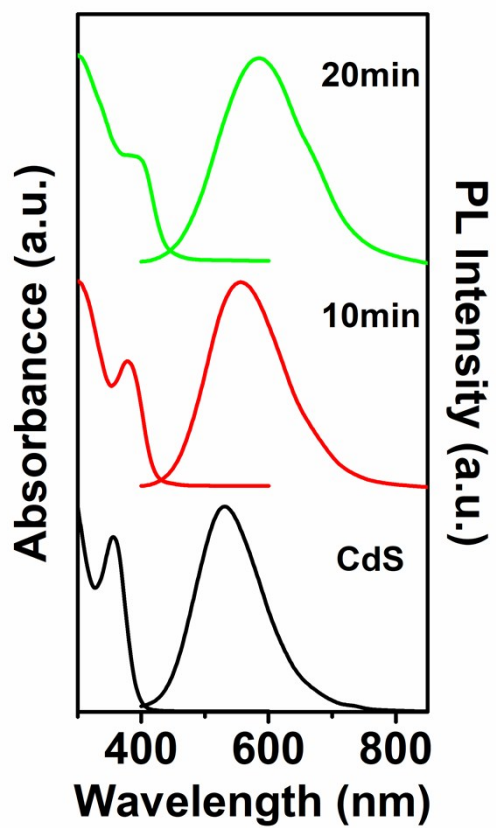
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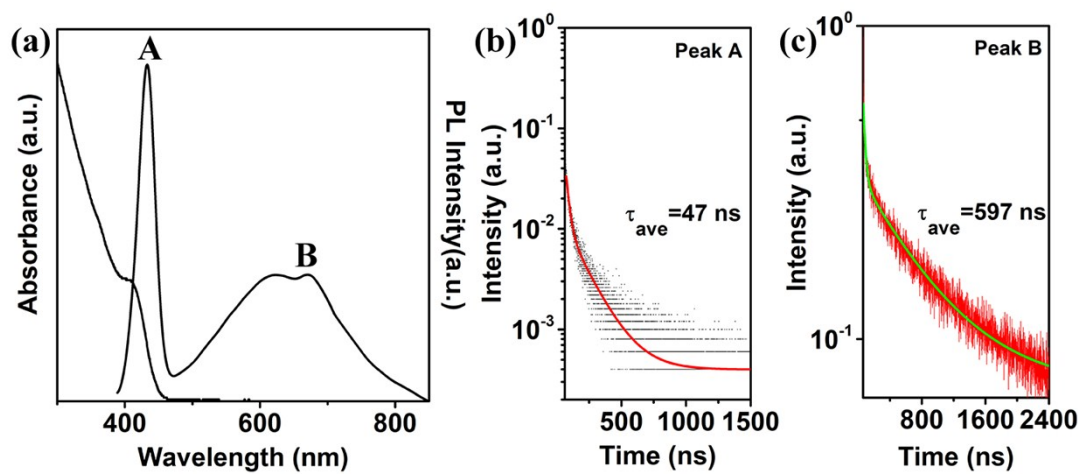
*E-mail: yongshengzhu0001@163.com*

**Figure S1**



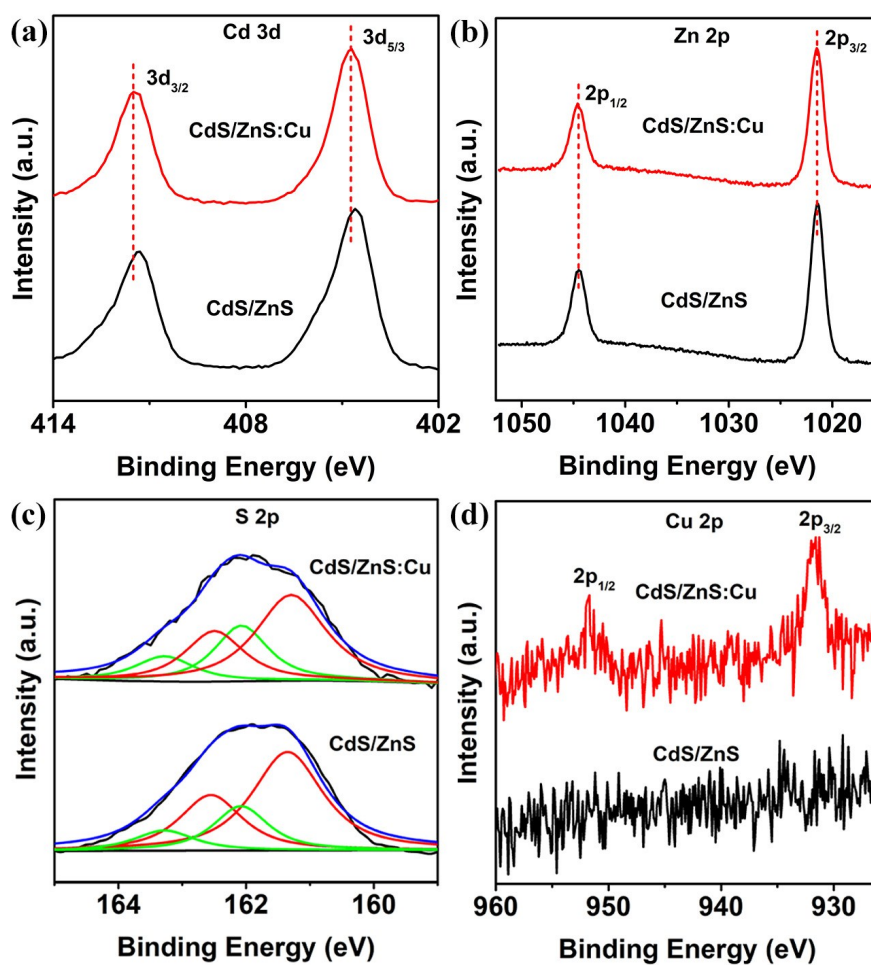
**Figure S1.** Absorption and PL spectra of the unwashed CdS NCs after injecting Zn precursors for different reaction time.

**Figure S2**



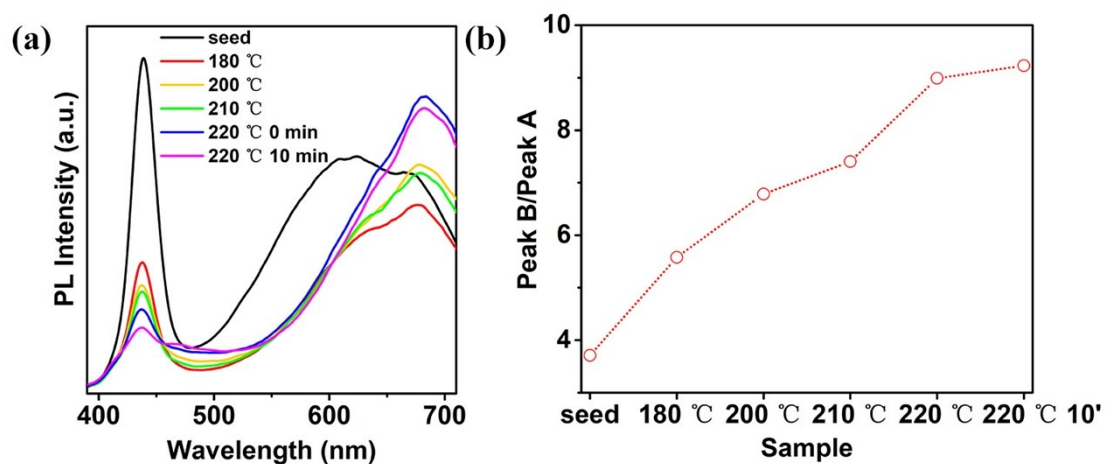
**Figure S2.** (a) Absorption and PL spectra of the CdS/ZnS NCs after injecting 0.5 mL of Cu precursor solution, and the corresponding PL decay curves detected by the peaks at (b) shorter wavelength and (c) longer wavelength.

**Figure S3**



**Figure S3.** XPS spectra of CdS/ZnS core/shell NCs and CdS/ZnS NCs after injecting 1 mL of Cu(DDTC)<sub>2</sub>: (a) Cd 3d; (b) Zn 2p; (c) S 2p; (d) Cu 2p.

**Figure S4**



**Figure S4.** (a) PL spectra of the Cu(I) doped CdS/ZnS NCs (0.5 mL of Cu precursor solution) during the heating process; (b) the ratio of the integral area of the peak at longer wavelength to that of the shorter wavelength for different heating temperature.